What is Claimed is:

[c1] A method of verifying a data preparation for an article constructed of a plurality of design layers, the data preparation being stated in terms of an instruction algorithm, the method comprising the steps of:

restating the instruction algorithm in terms of at least two fundamental algorithms;

creating a graphical representation for each fundamental algorithm;

combining the graphical representations corresponding to each fundamental algorithm according to the restated instruction algorithm to form a combined graphical representation; and

determining whether the data preparation is correct based on the combined graphical representation.

[c2] The method of claim 1, wherein the step of restating includes organizing the instruction algorithm according to group theory operators.

[c3] The method of claim 1, wherein the step of determining includes determining a polarity of the product.

[c4] The method of claim 3, further comprising the step of inverting the combined graphical representation prior to the determining step.

[c5] The method of claim 1, wherein the step of restating is a reiterative process.

[c6] The method of claim 1, wherein the article is for one of: an etching and a mask.

[c7] The method of claim 1, wherein the article includes a plurality of discrete segments for which verification is performed.

[c8] The method of claim 1, wherein the determining step includes implementing the combined graphical representation and comparing the result to the article.

[c9] The method of claim 1, wherein the determining step includes comparing the combined graphical representation to the article.

[c10] A system for verifying a data preparation for an article constructed of a plurality of design layers, the system comprising:

means for restating an instruction algorithm representative of the data preparation for the article in terms of at least two fundamental algorithms;

means for creating a graphical representation for each fundamental algorithm;

means for combining the graphical representations corresponding to the at least two fundamental algorithms to form a combined graphical representation; and

means for determining whether data preparation is correct based on the combined graphical representation.

[c11] The system of claim 10, wherein the means for determining implements the combined graphical representation and compares the result to the article.

[c12] The system of claim 10, wherein the means for determining compares the combined graphical representation to the article.

[c13] A computer program product comprising a computer useable medium having computer readable program code embodied therein for verifying a data preparation for an article constructed of a plurality of design layers, the program product comprising:

program code configured to restate an instruction algorithm representative of the data preparation for the article in terms of at least two fundamental algorithms;

program code configured to create a graphical representation for each fundamental algorithm;

program code configured to combine the graphical representations corresponding to the at least two fundamental algorithms to form a combined graphical representation; and

program code configured to determine whether the data preparation is correct based on the combined graphical representation.

[c14] The program product of claim 13, further comprising program code configured to determine a polarity of the product.

[c15] The program product of claim 14, further comprising program code configured to invert the combined graphical representation.

[c16] The program product of claim 13, wherein the article includes a plurality of discrete segments for which verification is performed.

[c17] The program product of claim 13, determine implements the combined graphical representation and compares the result to the article.

[c18] The program product of claim 13, wherein the program code configured to determine compares the combined graphical representation to the article.